FE272

Diagram No. 8556-3

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT

Type of Survey Field Examination

Field No. FA-10-3-85

Office No. FE-272

LOCALITY

State Alaska

General Locality Shelikof Strait

Locality Puale Bay

1985

CHIEF OF PARTY
CAPT J.W. Carpenter

LIBRARY & ARCHIVES

DATE June 10, 1986

☆U.S. GOV. PRINTING OFFICE: 1980—766-230

FE272

Area 5
CHTS

16580 } TO SIGN OFF SEE
16575 } "APPLICATION TO CHARTS"

NOAA FORM 77-28 (11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

FE-272

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

FA 10-3-85

State: Alaska

General locality: Shelikof Strait

Locality: Puale Bay

Scale: 1:10,000 Date of survey: 7/09/85 thru 7/17/85

Instructions dated: March 2, 1984 Project No.: OPR-P146-FA-85

Vessel: NOAA Ship Fairweather, Launches 2023, 2024, 2025, and 2026

Chief of party: Captain J. W. Carpenter

Surveyed by: Lt. M. Kenny, Lt(jg) J. Salmore, Lt(jg) D. Timmons, Ens. Hurst, Ens. S. Brezinski, Ens. E. Crozer, Ens. M. Abbott, CST E. Krick

Soundings taken by echo sounder, ~~hand lead~~, ~~pole~~ XXXXX XXXX DSF 6000N, pneumatic gage

Graphic record scaled by: FAIRWEATHER personnel

Graphic record checked by: FAIRWEATHER personnel

Verification ~~Protracted~~ by: Matthew Sanders Automated plot by: PMC Xynetics Plotter

Evaluation ~~Verification~~ by: C. R. Davies

Soundings in ~~fathoms~~ ~~feet~~ ~~at~~ ~~MLW~~ MLLW: Fathoms and tenths at MLLW

REMARKS: All times are UTC. Marginal Notes in black by evaluator. Separates are filed with the hydrographic data.

STANDARDS CK'D 6-12-86
C.Lay

AWOIS/SURF MSM 9/17/86

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537

☆ U.S. GOVERNMENT PRINTING OFFICE: 1978-665-010-1174

Descriptive Report
Field Examination (FA-10-3-85)
Puale Bay Shoal Investigations

A. Project ✓

This field examination was conducted in accordance with Project Instructions, OPR-P146-FA-85/4 Shelikof Strait, Alaska, dated March 2, 1984 with Change No. 1, dated May 9, 1984, and Change No. 2, dated May 17, 1985, and Change No. 3, dated June 17, 1985. The PMC OPORDER, the Hydrographic Manual (Fourth Edition) and the Hydrographic Survey Guidelines are also applicable. For this field examination there was no sheet letter designation in the Project Instructions.

B. Area Surveyed ✓

The area covered by this field examination lies on the western shore of Shelikof Strait, Alaska, and consists of an unsurveyed area and least depth determinations of four shoal areas from H-7195 (Puale Bay). Three of the shoal areas were specified in the Project Instructions. The fourth shoal area (8.7 fathom) was also investigated due to its close proximity to the survey area and inadequate development on H-7195. The four shoal areas investigated are:

Shoal	Latitude	Longitude
3.9 ~~4.3~~ fathoms	57 41'.~~85~~'N 50.57"	155 23'.~~15~~'W 10.23"
2.3 ~~4.9~~ fathoms	57 40'.~~80~~'N 48.15"	155 21'.~~42~~'W 27.27"
10.0 ~~10.6~~ fathoms	57 41'.~~40~~'N 25.76"	155 20'.~~72~~'W 36.66"
5.8 ~~8.7~~ fathoms	57 40'.~~70~~'N 39.71"	155 21'.~~70~~'W 48.79"

The unsurveyed area is bounded by latitudes 57/41/18 N and 57/41/43 N and longitudes 155/23/30 W and 155/26/00 W. Survey operations began on July 9, 1985 (DN 190) and ended on July 17, 1985 (DN 198).

The project instructions specified this area be surveyed at 1:20,000 scale. However, because the irregularity of the bottom required reduced line spacing, areas surveyed during this field examination were run at a 1:10,000 scale to allow the data to be plotted in a readable fashion. Developments were displayed at a 1:5,000 scale due to the line spacing involved (11 meters in some cases). All areas were surveyed at 1:10,000 scale accuracy.

C. Sounding Vessels ✓

Hydrography on this field examination was conducted with Jensen launches FA-3 (2023), FA-4 (2024), FA-5 (2025), and FA-6 (2026). FAIRWEATHER (2020) was used to obtain the sound velocity cast. Bottom samples were collected by FA-5 (2025). No unusual sounding vessel configurations were used during this field examination.

D. Sounding Equipment and Corrections to Echo Soundings

FAIRWEATHER's four survey launches were equipped with dual-beam Raytheon DSF-6000N echo sounders to obtain soundings during this survey. See Table I for a list of equipment used by vessel and date.

Table I
Sounding Equipment

Vessel	Date	Instrument/Model	Recorder
FA-3 (2023)	DN 193 to DN 195	Raytheon DSF-6000N	A 121 N
FA-4 (2024)	DN 190 to DN 195	Raytheon DSF-6000N	B 048 N
FA-5 (2025)	DN 190 to DN 194	Raytheon DSF-6000N	A 113 N
FA-6 (2026)	DN 190 to DN 191	Raytheon DSF-6000N	B 039 N

Echo-sounding equipment was monitored continuously while on line. All hydrographic data were scanned at least twice to insert peaks and deeps between soundings and to ensure proper depth digitization. The effects of excess wave and swell action were adjusted at this time.

Diver's least depths were obtained using a Lietz Fiberglass tape measure or pneumatic depth gauge manufactured by 3-D Instruments, Inc. (s/n 8302079 N). Data acquisition using this gauge consisted of the following procedure: the orifice of the gauge was attached to a 150-foot air hose which was held in place at the least depth position by divers. A surface tender, using air from a scuba tank, pressurized the system three times and then recorded the averaged gauge value. System calibration data can be found in the separate Corrections to Echo Soundings Report, OPR-P146-FA-85; H-10181, H-10183, and Puale Bay Field Examination.

FAIRWEATHER's four survey launches were tested for settlement and squat on March 12, 1985 (DN 71) in Shilshole Bay, Seattle, Washington. Measurements were conducted in accordance with Section 4.9.4.2 of the Hydrographic Manual. It was determined that there were no applicable settlement and squat corrections for any launch when performing surveys in fathoms. Refer to the Corrections to Echo Soundings Report for details concerning methods used for settlement and squat tests.

One bar check was performed daily, wind and seas permitting. Bar checks were normally done at three fathoms, though if time and seas permitted, a six- or seven-fathom check was done.

Bar checks combined with the velocity correctors determined launch TRA values. For this survey, all launches were determined to have a TRA of 0.3 fathoms. All soundings on the final field sheet were plotted using this TRA value for all launches.

Wind and sea conditions occasionally made it necessary to visually average the depth profile to correct for heave action. When heave averaging was required, soundings were corrected in accordance with Section 4.9.3.2 of the Hydrographic Manual, and the Hydrographic Guideline #31.

Velocity correctors were determined from one SV/D cast, (no. 7) done on DN 191 at latitude 57/43/06 N, longitude 155/33/12 W. Velocity information was determined for this survey from the cast. This information was applied to all soundings plotted on the final field sheets.

The SV/D cast was performed using a Plessy Model 9040 Environmental Profiling System (s/n 5647). This instrument was calibrated at the Northwest Regional Calibration Center (NRCC) in February 1985. An onboard PDP8/e FOCAL computer program was used to convert the frequency readings of the SV/D system to engineering units for determination of sound velocity profiles. A sea-surface temperature was taken at the time of the cast as a check on the Plessy system.

Sounding correctors determined for this field examination apply to both the narrow- and wide-beam sounding data. Digitized depths were obtained from the narrow-beam transducer.

TC/TI tapes were made in accordance with PMC OPORDER, Appendix Q, dated April 13, 1984. Printouts of TC/TI tapes are included in Appendix D of this report. Appendices are filed with the hydrographic data.

Predicted tide correctors were applied to the soundings plotted on the field sheets for this survey. The tide correctors were from the 1985 West Coast of North and South America Tide Tables. Seldovia, Alaska was the controlling and reference station for this field examination with times and heights corrected for Puale Bay. Program AM500 was used to interpret tides for hydrography. For further information, refer to appendix B, "Field Tide Note".

E. Hydrographic Sheets ✓

All field sheets were plotted aboard FAIRWEATHER using PDP 8/e computers and Complot Plotters. This field examination consists of three final field sheets. All are plotted on mylar. The dimension, scale, and skew of each is as follows:

Area	Dimensions	Skew	Scale
Dev. 1	11 x 16 in.	0	1:10,000
Dev. 2A	11 x 8.5 in	0	1:5,000
Dev. 2B	11 x 8.5 in.	0	1:5,000

All hydrographic data for this field examination will be forwarded to the Pacific Marine Center, N/MOP21, Seattle, Washington, for verification and smooth plotting.

F. Control Stations ✓

Station recovery for this field examination was performed by FAIRWEATHER personnel. All control positions were based on the 1927 North American Datum. The following stations were used in support of this field examination.

Station Name	Signal Number
KEKURNOI 1919	200
HIKE 1920	202
REEF 1920	203

For additional information refer to the Horizontal Control Report, OPR-P146-FA-85; H-10181, H-10183, and Puale Bay Field Examination.

G. Hydrographic Position Control

Hydrographic positioning control was accomplished using the Motorola Mini-Ranger III System. The control configurations consisted of range-range for all positioning control including detached positions.

The following table (Table II) is a listing of console and R/T units for each sounding vessel.

Table II
Mini-Ranger Equipment by Vessel

DN	Vessel Number	Console Number	R/T Number
190-191	2023	716	C1875
192-195	2023	703	E2716
190-195	2024	B0323	B1398
190-195	2025	506042	B1212
190-191	2026	703	E2716
192-195	2026	716	C1875

Mini-Ranger electronic correctors were determined from base line calibrations (BLC). The intitial BLC was performed on DN's 140, 141, 151, 154, from Lake Union Pier B to Lake Union Naval Reserve Pier in Seattle, WA. The final BLC was performed on DN 200 in Kodiak, AK and on DN's 209 and 210 in Imuya Bay, AK. The final correctors were determined by averaging the intial correctors with the ending correctors.

Final base line calibrations conducted using code 6 transponder on DN 200 produced atypical graphs and results. Ending critical system checks for the Puale Bay Field Examination conducted on DN 195 showed code 6 observed correctors to all be within 4 meters of code 6's beginning BLCs. Data collected for this project using code 6 were retained; however, final electronic correctors for code 6 were determined using the initial BLC results. Code 6 transponder was sent to PMC for repair.

On DN 191 Vessel Number (VN) 2026's transducer was damaged during operations (no data were lost). The console-R/T pair for VN 2026 (console 703, R/T E2716), critically system checked in VN 2026, was transferred to VN 2023 as shown in Table II. An ending critical system check was performed four days later.

Hydrographic positioning equipment was critically system checked at least once per week using theodolite cuts. All hydrographic positioning equipment was found to be accurate within the limits set forth by the PMC OPORDER.

No unusual weather conditions adversely affected the positional accuracy of this survey. In all cases, the launch R/T units were located directly over the transducers thus eliminating the need for ANDIST correctors.

H. Shoreline ✓

Shoreline verification of manuscript TP-00626 (1:20,000 scale enlarged to 1:10,000) was performed within survey limits. Shoreline details and features have been transfered to the final field sheet with changes displayed in red. All reefs, islets, and foul areas were verified and compared well with TP-00626 with revised limits shown on the final field sheet in red. Foul areas on TP-00626 were slightly smaller than those delineated by hydrography.

One rock position was revised from the shoreline manuscript. The rock, located at latitude 57/41/20 N, longitude 155/25/51 W, is plotted on the final field sheet in red. New rocks located within the survey area are depicted in black on the final field sheet. Red rock is shown on the Smoothsheet in black position # 3315, #(2), latitude 57°41'20.5"N, longitude 155°25'50.93"W.

I. Crosslines ✓

A total of 8.16 nm of crosslines were run comprising 8% of the total coverage. Crosslines were run approximately perpendicular to the mainscheme with an effort made to place crosslines over prominent features. concur
Crosslines agreed within one fathom with the mainscheme lines.

J. Junctions ✓

Survey H-7195 (1947, scale 1:20,000) junctions with the previously unsurveyed area (see development 1) described under section B. Junction soundings agree within one fathom. H-7195 also delimits foul areas and notes rock locations within the present survey area. This field examination shows the foul areas to be more extensive. All rocks shown on H-7195 were located during the field examination. In addition, new rocks were found and are plotted on the final field sheet in black.

concur

Do not concur See EVAL Report Section 5

Data from this field examination should be used to delineate foul areas and rocks. concur

K. Comparison With Prior Survey ✓

Comparisons were made between this field examination and H-7195. H-7195 is a 1:20,000 scale survey performed in 1947. All four shoal investigations performed for this field examination supersede the hydrography on H-7195. In all shoal investigations the bottom was found to be rock covered with kelp. Discussions of the four shoal investigations follow. No prior surveys fall within the area of common coverage.

See EVAL Report. Section 5 for supercession of H-7195

4.3-Fathom Shoal (see development 1) Sheet 2 of 4

A least depth of 3.8 (9 RK) fathoms (position 1000) at latitude 57/41/50.8 (57) N, longitude 155/23/10.2 (3) W, was obtained by divers in the vicinity of the 4.3-fathom sounding from H-7195. Surrounding depths obtained during this field examination agree with H-7195 within one fathom. concur

4.9-Fathom and 8.7-Fathom Shoals (see development 2A) Sheet 4 of 4

Hydrography determined that a shoal (tending in a NE - SW direction) runs across the two prior depths. The least depth at the NE end (where the 4.9-fathom prior sounding was) was determined by divers to be 2.2 (3) fathoms (RK) (position 1004) at latitude 57/40/~~45.8~~ (49.15) N, longitude 155/21/~~23.6~~ (27.27) W. The shoalest sounding found by divers at the SW corner was ~~6.8~~ (5.8) fathoms (position 1010) at latitude 57/40/~~41.4~~ (39.71) N, longitude 155/21/~~45.5~~ (48.79) W, in the vicinity of the 8.7-fathom prior sounding. West of 155/21/30 W within survey limits, 100% bottom coverage was obtained with the DSF-6000N to better delineate the shoal and provide least depth determination. Depths surrounding the shoals investigated in this field examination agree within one fathom of those on H-7195. concur

10.6-Fathom Shoal (see development 2B) Sheet 3 of 4

The DSF-6000N echo sounder was used to provide 100% bottom coverage in this area. A shoal was found to run in an E-W direction with a least depth of 9.2 (9) fathoms (position 1054 +4) at latitude 57/41/~~25.0~~ (25.86) N, longitude 155/20/57.5 (51) W. The shoal averaged 10-fathoms deep with the surrounding waters being 13- to 15-fathoms deep. A separate pinnacle was also discovered south of the main shoal with a least depth of ~~9.8~~ (10.8) fathoms (position 3478 +5) at latitude 57/41/~~16~~ (25.76) N, longitude 155/20/~~46~~ (30.66) W. Surrounding depths obtained during this field examination agreed within one fathom with H-7195. concur

Divers located least depths either by performing visual investigations where the objects were found immediately or by performing circle searches. All divers' depths were obtained by either a fiberglass tape or by using a pneumatic depth gauge. Refer to section D, "Sounding Equipment and Corrections to Echo Soundings", in this report for additional information on the pneumatic depth gauge.

A circle search consists of the following procedure: A weight of approximately 50 pounds with a line and float attached is dropped at the investigation site. Two divers descend to the weight and attach the end of a fiberglass measuring tape to the weight. They then swim away from the weight with the tape reel in hand until they can no longer see the weight. They then swim back along the tape until the weight becomes visible and note the distance. In this manner, visibility is determined. Once visibility is known, the divers position themselves at intervals of visibility from the weight, i.e. if visibility is 25 feet, the divers will be at 25 foot intervals from the weight. One diver will be at the first interval of visibility and the other will be at twice the distance. After marking the bottom, the divers swim a full circle holding tightly to the tape, keeping the tape taught, looking to both sides and close to the bottom. After the first circle, the divers move out to three and four

times the visibility distance respectively (if 25 foot visibility , the first circle will be at 25 and 50 feet on the tape with the second circle being at 75 and 100 feet on the tape). This procedure is continued until the maximum radius of the circle is reached.

There were no AWOIS items within survey limits. concur

L. Comparison With Chart ✓

The largest scale chart of the area is chart number 16580 (8th edition dated October 31, 1981) which is at a scale of 1:350,000. Detailed comparisons between the chart and this field examination are difficult due to the small scale of the chart.

Development 1 covers the unsurveyed area on survey H-7195 and the 4.3-fathom shoal development. All of Development 1 lies within the area designated as foul on chart 16580. There are no charted soundings in the foul area; thus, no depth comparisons were made. Sheet 1 and 2 of 4 for coverage of unsurveyed area. concur

Developments 2A (4.9- and 8.7-fathom shoals) and 2B (10.6-fathom shoal) fall within the charted 10-fathom curve on chart 16580. A depth of 4.75 fathoms is charted where this field examination found 2.~~2~~3 fathoms. Due to its close proximity to the foul area and the scale of the existing chart, the 2.~~2~~3-fathom depth is not considered a danger to navigation. concur

No dangers to navigation were located within the boundaries of this field examination. concur

M. Adequacy ✓

This field examination is complete and fully adequate to supersede the prior survey within their common areas. No additional field work is necessary. concur

N. Aids To Navigation ✓

There are no aids to navigation located within the limits of this field examination. concur

O. Statistics ✓

Vessel	2020	2023	2024	2025	2026	Total
Positions	-	215	547	4	124	890
Nautical Miles	-	14.7	36.7	--	8.8	60.2
Square Miles	-	.25	.75	--	.25	1.25
Bottom Samples	-	--	--	4	--	4
Velocity Casts	1	--	--	--	--	1
Tide Stations	1	--	--	--	--	1
Detached Positions	-	17	11	--	--	28

P. Miscellaneous ✓

Currents within the area of this field examination were noted to be less than 0.5 knot.

In accordance with project instructions bottom samples were not submitted to the Smithsonian Institution.

Q. Recommendations ✓

It is recommended that a larger scale chart be made of Puale Bay. The present 1:350,000 scale chart of the area is inadequate for navigation within the bay. In a letter dated June 22, 1977 it is stated that there is a plan to produce a 1:80,000 scale chart of the Puale Bay area. This scale should be sufficient from a user's standpoint to depict the bay. concur

This field examination showed the bottom topography to be extremely irregular in the survey area. Transit through the charted foul limits was very difficult until familiarity was obtained. It is recommended that a caution be placed on the new 1:80,000 scale chart in this area stating that there are pinnacle rocks and extreme caution should be exercised. Local knowledge is recommended. concur

R. Automated Data Processing ✓

All range-range hydrography was processed in accordance with the PMC OPORDER, Appendix Q, dated April 16, 1985. All peaks and deeps and sounding corrections for range-range hydrography were placed on the corrector tape. In all cases inserts were positioned by time and course.

The following is a list of the hydroplot programs used for processing and data acquisition during this field examination.

Number	Program Name	Version Date
RK 112	R/R Real Time Plot	4/23/84
RK 201	Grid, Signal and Lattice Plot	4/18/75
RK 211	R/R Non Real Time Plot	2/13/84
RK 300	Utility Computations	10/21/80
RK 330	Reformat and Data Check	5/04/76
PM 360	Electronic Corrector Abstract	2/02/76
RK 407	Geodetic Inverse/Direct Computation	9/25/78
AM 500	Predicted Tide Generator	11/10/72
RK 530	Layer Corrections for Velocity	5/10/76
RK 562	Theodolite Calibration	9/05/84
AM 602	ELINORE - Line Oriented Editor	12/08/82

S. Referral To Reports ✓

The reports listed below are to be submitted separately from the descriptive report and the hydrographic records for this field examination.

Report	To Be Submitted
Horizontal Control Report	September 1985
Electronic Control Report	September 1985
Correction to Echo Soundings Report	September 1985
Coast Pilot Report	October 1985

Keep for FE-272

0 30 12 42

MCW

Rock - 57°41'20" 155°25'51"

*(2) 57°41'20.5" 155°25'50.[illegible]

3.9 RK 57°41'50.87 155°23'10.3"

30 11 43

13.5 30 43

30 20.5

25 30

30 15 45

30 12 42

Note Ideas

* 57°41'24" 155°23'54" ✓

*(C) 57°41'17" 155°23'43" No cap page 3

*(8) 57°41'21" 155°23'42"

*(4) 57°41'34" 155°23'45" ✓

3.9 RK 57°41'50.5" 155°23'10" - added second Rock +

20.5 30

12 30 42

Page (4)

	*(2)	57°41' 20.5"	155°25' 42	— to conj. 60 — to conj.
Select	*(2)	57°41' 20.5"	155°25' 50.5	to conj.
	1 RK	57°41' 25.5"	155°26' 05"	— added 3X Sunken rock *
	*(7)	57°41' 32"	155°25' 43.5"	to conj.
/	*(3)	57°41' 36"	155°25' 38.5" ~~38.5~~"	added *
	*(7)	57°41' 35"	155°25' 26"	No
	*(2)	57°41' 37.5"	155°25' 23".5"	No
	*(1)	57°41' 36"	155°25' 16"	added
	4.7 RK	57°41' 30"	155°25' 16"	—
Red Rock	*	57°41' 36"	155°24' 59"	
	O(8)	57°41' 22"	155°24' 30"	
	—1 RK	57°41' 23"	155°24' 36"	No
	—*(2)	57°41' 35.5	155°24' 25"	
	3.5 RK	57°41' 32"	155°24' 23"	
~~3~~ 3.6	3.9 RK	57°41' 50.57"	155°23' 10.3	

Field Tide Note
OPR-P146-FA-85
Puale Bay, Alaska

As stated in the project instructions OPR-P146-FA-85, the tide gauge at Seldovia , Alaska (945-5500) served as the controlling and reference station for the predicted tides used for correctors on the field examination of shoal indications and an unsurveyed area on survey H-7195 (1947). Leveling and maintenance of this station are performed by the Pacific Tide Party.

Predicted tide correctors were interpolated aboard FAIRWEATHER using data from the 1985 West Coast Tide Tables and program AM 500 dated November 10, 1972. All correctors calculated were based on the zone correctors for Puale Bay.

All times of predicted and reported tides are expressed in Universal Coordinated Time (UTC). Predicted tides were acceptable for hydrography with no discrepancies in the data attributable to tide errors.

One field tide station, Puale Bay (945-8209), was established during this field examination. The gauge, a Bristol Bubbler analog (S/N 68A9333), was installed at the historic site on an island 0.5nm off the eastern point of Puale Bay (latitude 57/42/24 N, longitude 155/23/24 W) on July 9, 1985 (DN 190). The orifice was mounted to an eyebolt secured to a boulder on the bottom. The staff was bolted to a rock face and guyed from the top and bottom. Zero on the staff equals 2.8 feet on the analog trace. The gauge was removed on July 17, 1985 (DN 198). For more information see the Tide Station Report #945-8209, Puale Bay, AK.

Opening levels were performed on July 9, 1985 (DN 190) from the staff to three benchmarks. All three marks are standard NOS brass disks cemented into rock. A closure of one millimeter was observed. The levels agreed within 4 millimeters of the historic data. Closing levels were performed on July 17, 1985 (DN 198) over the same run with a closure of 2 millimeters obtained. The closing levels are in agreement with the opening levels. Hydrographic operations ended on July 16, 1985 (DN 197).

The staff was found to have pulled free from the rock face on July 13, 1985 (DN 194) and was reinstalled the same date. Levels were rerun between the first benchmark and the staff and it was determined that the staff was 8 millimeters lower than the first installation. No data was lost because of the staff pulling free.

No zoning recommendations are forwarded.

PUALE BAY
SIGNAL LISTING
OPR-P146-FA-85
FA-10-3-85

KEKURNOI 1919
200 0 57 43 34119 155 18 09001 250 0032 000000

HIKE 1920
202 0 57 42 35430 155 22 51435 250 0024 000000

REEF 1920
203 0 57 40 41231 155 23 13699 250 0023 000000
*

Approval Sheet

The final field sheets and the accompanying records have been reviewed for accuracy, completeness, compliance with project instructions, and adherence to required standards and procedures. The Commanding Officer monitored field work and inspected selected portions of the data on a daily basis. This field examination is complete and requires no additional field work. The data is forwarded for final review and processing.

Submitted by:

Duane Timmons
Lieutenant (Junior Grade), NOAA

Reviewed by:

Maureen R. Kenny
Lieutenant, NOAA
Field Operations Officer

Approved by:

John W. Carpenter
Captain, NOAA
Commanding Officer

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SHEET

DATE: 09/24/85

Marine Center: Pacific

OPR: P146

272

Hydrographic Sheet: (None-Field Examination Puale Bay, AK)

Locality: Puale Bay Shoal Investigation, AK

Time Period: July 10-14, 1985

Tide Station Used: 945-8209 Puale Bay, AK

Plane of Reference (Mean Lower Low Water): 2.61 ft.

Height of Mean High Water Above Plane of Reference: 11.9 ft.

Remarks: Recommended Zoning.

Zone Direct

James L. Hubbard
Chief, Tidal Datum Quality
Assurance Section

NOAA FORM 77-27(H) (9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: FE-272

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	4	SMOOTH OVERLAYS: POS., ARC, EXCESS	15
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	3

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	1					
ENVELOPES						
VOLUMES	1					
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List): TP-00626

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	*EVALUATION*	*TOTALS*
POSITIONS ON SHEET			890
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	59		59
VERIFICATION OF SOUNDINGS	64		64
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	56		56
COMPARISON WITH PRIOR SURVEYS AND CHARTS		7	7
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		25	25
GEOGRAPHIC NAMES			
OTHER* Digitizing			10
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	179	32	221

Pre-processing Examination by S. Iwamoto	*Beginning Date* 9/11/85	*Ending Date* 9/12/85
Verification of Field Data by M. Sanders	*Time (Hours)* 179	*Ending Date* 3/27/86
Verification Check by S. Otsubo, B. Olmstead, J. Green	*Time (Hours)* 39.5	*Ending Date* 5/7/86
Evaluation and Analysis by C.R. Davies	*Time (Hours)* 32	*Ending Date* 5/7/86
Inspection by D. Hill	*Time (Hours)* 2	*Ending Date* 5/8/86

☆ U.S. GOVT. PRINTING OFFICE 1983: 764-006/6061

PACIFIC MARINE CENTER
EVALUATION REPORT
FE-272

1. INTRODUCTION

FE-272 was accomplished by the NOAA Ship FAIRWEATHER in accordance with the following project instructions:

OPR-P146-FA-84, dated March 2, 1984
Change Number 1 dated May 9, 1984
Change Number 2 dated May 17, 1985
Change Number 3 dated June 17, 1985

The survey area is situated along the western side of Shelikof Strait at the eastern entrance to Puale Bay. The purpose of this field examination was to develop and determine least depths of three shoals and to survey an unsurveyed portion of H-7195 (1947). The results of these investigations are depicted on four page-sized maps that accompany this report.

Predicted tides based on the Seldovia, Alaska gage were used during field processing. Tide correctors used for the final reduction of soundings reflect approved hourly heights zoned from Puale Bay.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The revised data is listed in the smooth position/sounding printout.

A digital file for this survey has been generated and includes categories of information required to comply with N/CG2 Hydrographic Survey Guideline No. 23, Completion of Digital Hydrographic Surveys, September 7, 1983. Certain descriptive information, however, may not be included in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

The following features have been added to the smooth sheet from the field sheet without supporting positional information:

Feature	Latitude North	Longitude West
Reef	57°41'38"N	155°25'24"W
Reef	57°41'35"N	155°25'09"W
Reef	57°41'19"N	155°23'47"W

2. CONTROL AND SHORELINE

Hydrographic control and positioning are adequately discussed in sections F and G of the hydrographer's report and in the Horizontal and Electronic Control Reports for OPR-P146-FA-85.

Horizontal control station positions used during hydrography are published positions based on the North American Datum of 1927.

Shoreline and some foreshore features originated from unreviewed Class I manuscript TP-00626. The photography was flown in June 1976. Field edit was conducted in September 1981.

3. HYDROGRAPHY

Soundings at line crossings are in good agreement. The depth curves could be completely and adequately drawn. Delineation of the bottom configuration and the determination of least depths are adequate.

4. CONDITION OF SURVEY

The hydrographic records and reports are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change Three, except as noted in the Preprocessing Examination Report, dated September 17, 1985, and the following:

a. Duplicate position numbers were utilized during data acquisition. This occurred between two launches on the same day (positions 3445-3464). Hydrographic positions shall be numbered consecutively with a block of numbers assigned to each sounding vessel (Hydrographic Manual, sections 1.4.5.2 and 4.4.6).

b. Several rocks and reefs shown on TP-0626 were not shown on the final field sheet but were observed to exist in the survey area. The field sheet of all inshore surveys shall show shoreline and all other available information on alongshore and offshore rocks, (4.2.7 Hydrographic Manual).

5. JUNCTIONS

FE-272 junctions with H-7195 (1947).

H-7195 has been processed and submitted to Rockville for charting. The junction comparison was made by using a copy and resulted in a butt junction. The present survey should be used to supersede all data in areas common to both surveys except for the features listed below:

Feature	Latitude	Longitude
0^{5} Rk	57°41'35"N	155°26'03"W
* Covered 2 ft at MLLW	57°41'36"N	155°24'59"W
* (7)	57°41'30"N	155°25'18"W

These features have been transferred to FE-272 to portray shoaler information.

The development of the three shoals and the unsurveyed area on H-7195 were well documented and least depths determined. For more detail see section K of the hydrographer's report.

6. COMPARISON WITH PRIOR SURVEYS

There are no prior surveys or numbered pre-survey review items contained within the limits of this field examination. The only survey which is common with the present survey is the junction survey H-7195 (1947).

7. COMPARISON WITH CHART

Chart 16580, 8th Edition, dated Oct. 31, 1981; scale 1:350,000

a. Hydrography - Charted information originates with the junction survey discussed in Section 5 of this report. All charted features were satisfactorily disposed of and discussed in the hydrographer's report, section L.

FE-272 is adequate to supersede charted hydrography within the common area.

There have been no danger to navigation reports submitted by the ship or PMC Nautical Chart Branch for this survey.

b. Controlling Depths - There are no controlling depths within the limits of this survey.

c. Aids to Navigation - There are no fixed or floating aids within the limits of this survey.

8. COMPLIANCE WITH INSTRUCTIONS

FE-272 adequately complies with the project instructions noted in section 1 of this report.

9. ADDITIONAL FIELD WORK

This is a good field examination. No additional field work is recommended.

Respectfully submitted,

Charles R. Davies

C. R. Davies
Cartographer

This survey has been examined and it meets Charting and Geodetic Services standards and requirements for use in nautical charting. The survey is recommended for approval.

Dennis Hill
Chief, Hydrographic Section

ATTACHMENT TO DESCRIPTIVE REPORT FOR FE-272

I have reviewed the smooth sheet, accompanying data, and reports of this hydrographic survey. Except as noted in the Evaluation Report, the hydrographic survey meets or exceeds Charting and Geodetic Services (C&GS) standards, complies with instructions, and is accurately and completely represented by the smooth sheet and digital data file for use in nautical charting.

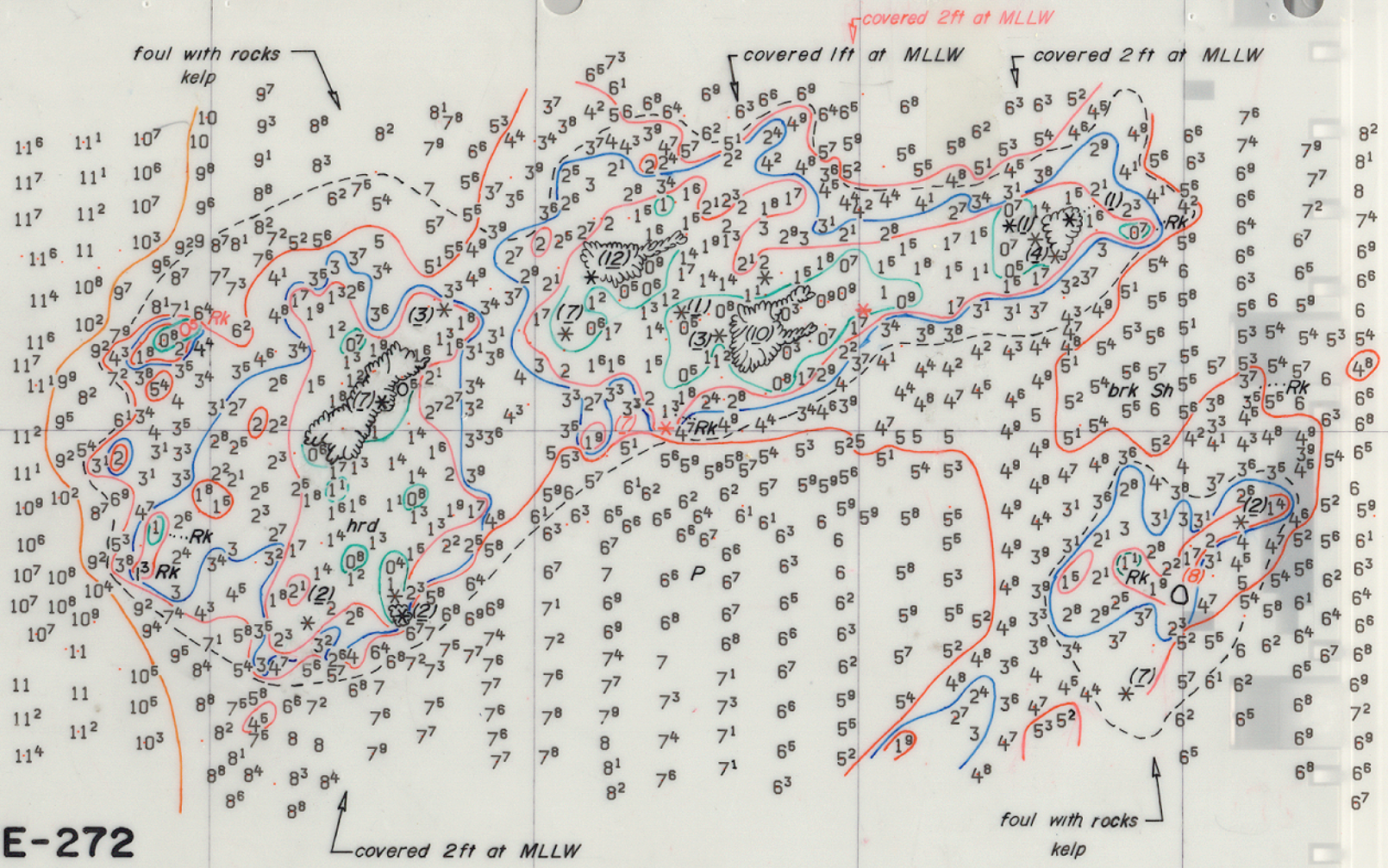
Thomas W Richards
Chief, Nautical Chart Branch (Date)

CLEARANCE: SIGNATURE AND DATE:

N/MOP2:LWMordock Larry W. Mordock

After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards with only the exceptions as noted above. The above recommendations are forwarded with my concurrence.

Robert L. Sanford May 21, 1986
Director, Pacific Marine Center (Date)



57° 41' 30"

JOINS INSET 3

FE-272

ALASKA, SHELIKOF STRAIT
PUALE BAY

ADJOINS H-7195(1947)

57° 41' 00"

OPR-P146
Scale: 1:10000

Surveyed by: NOAA Ship FAIRWEATHER
Date of survey: July 1985

Sounding datum : MLLW
Sounding unit: Fathoms and Tenths

155° 26' 30" 155° 26' 00" 155° 25' 30" 155° 25' 00" 155° 24' 30"

155° 24′ 00″ 155° 23′ 30″ 155° 23′ 00″

57° 42′ 00″ 57° 42′ 00″

57° 41′ 30″ 57° 41′ 30″

57° 41′ 00″ 57° 41′ 00″

foul with rocks
kelp

covered 2ft at
MLLW

brk
Sh
G
rky
Rk

ADJOINS H-7195(1947)

foul with rocks
kelp

FE-272
INSET 3:
Scale 1:10000

155° 21′ 15″ 155° 21′ 00″ 155° 20′ 45″ 155° 20′ 30″

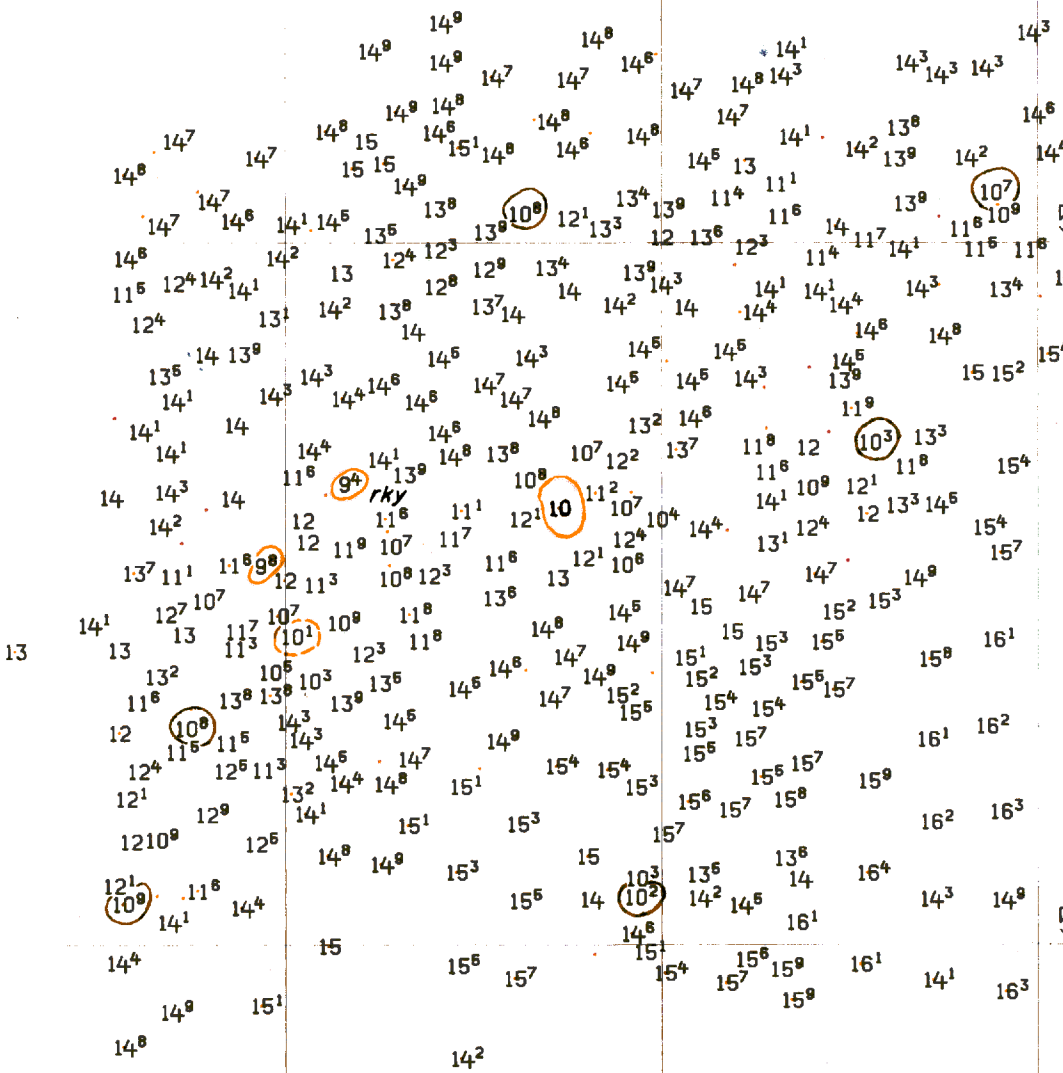
57° 41′ 45″

FE-272
INSET 2:
Scale 1:5000

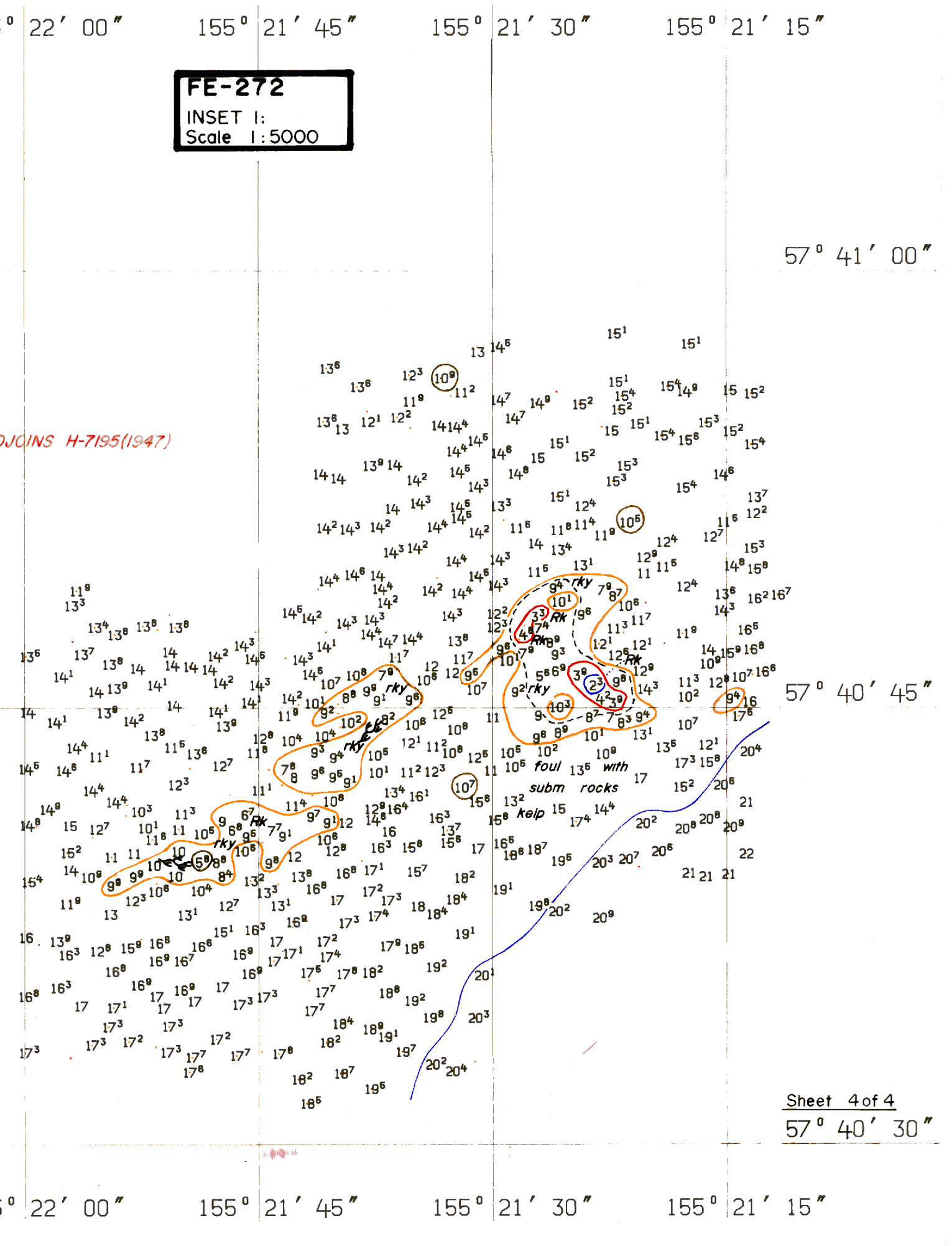
ADJOINS H-7195(1947)

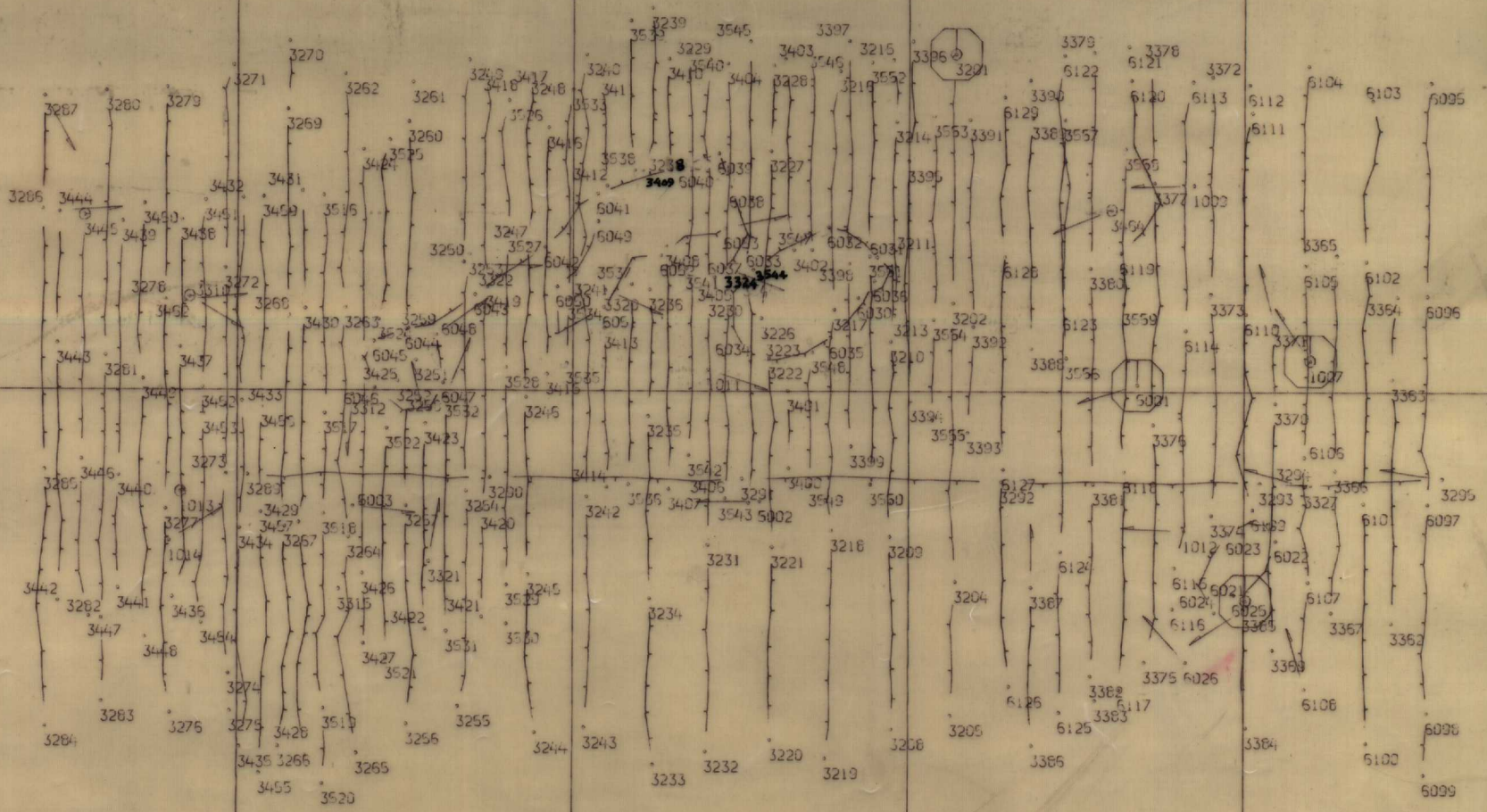
57° 41′ 30″

57° 41′ 15″



155° 21′ 15″ 155° 21′ 00″ 155° 20′ 45″ 155° 20′ 30″


FE-272
INSET 1:
Scale 1:5000
155° 22′ 00″
155° 21′ 45″
155° 21′ 30″
155° 21′ 15″
57° 41′ 00″
57° 40′ 45″
57° 40′ 30″
JOINS H-7195(1947)
rky
Rk
foul
with
subm
rocks
kelp
Sheet 4 of 4



57° 41' 30"

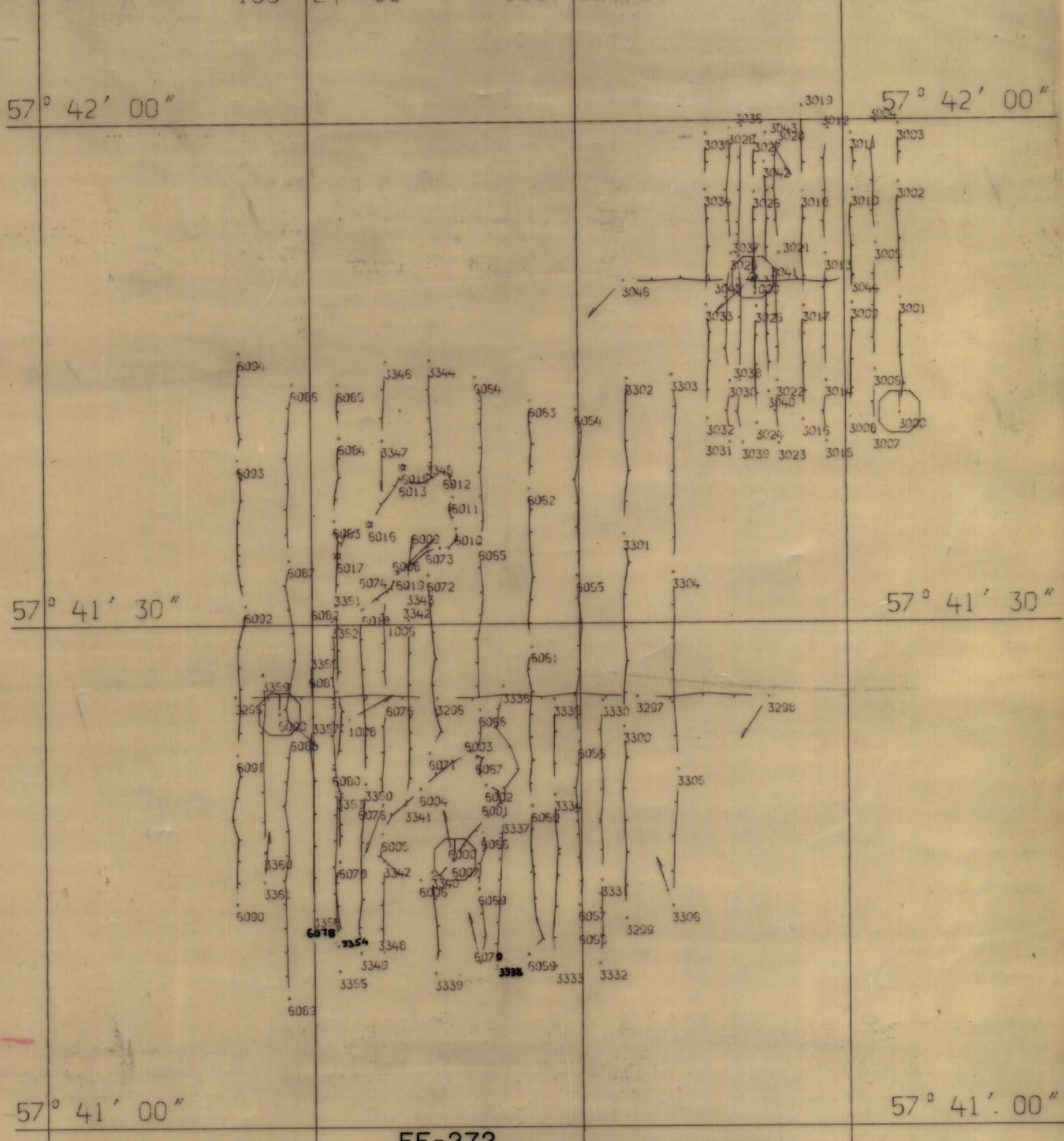
57° 41' 00"

FE-272

POSITION OVERLAY

Sheet 1 of 4

155° 26' 30" 155° 26' 00" 155° 25' 30" 155° 25' 00" 155° 24' 30"



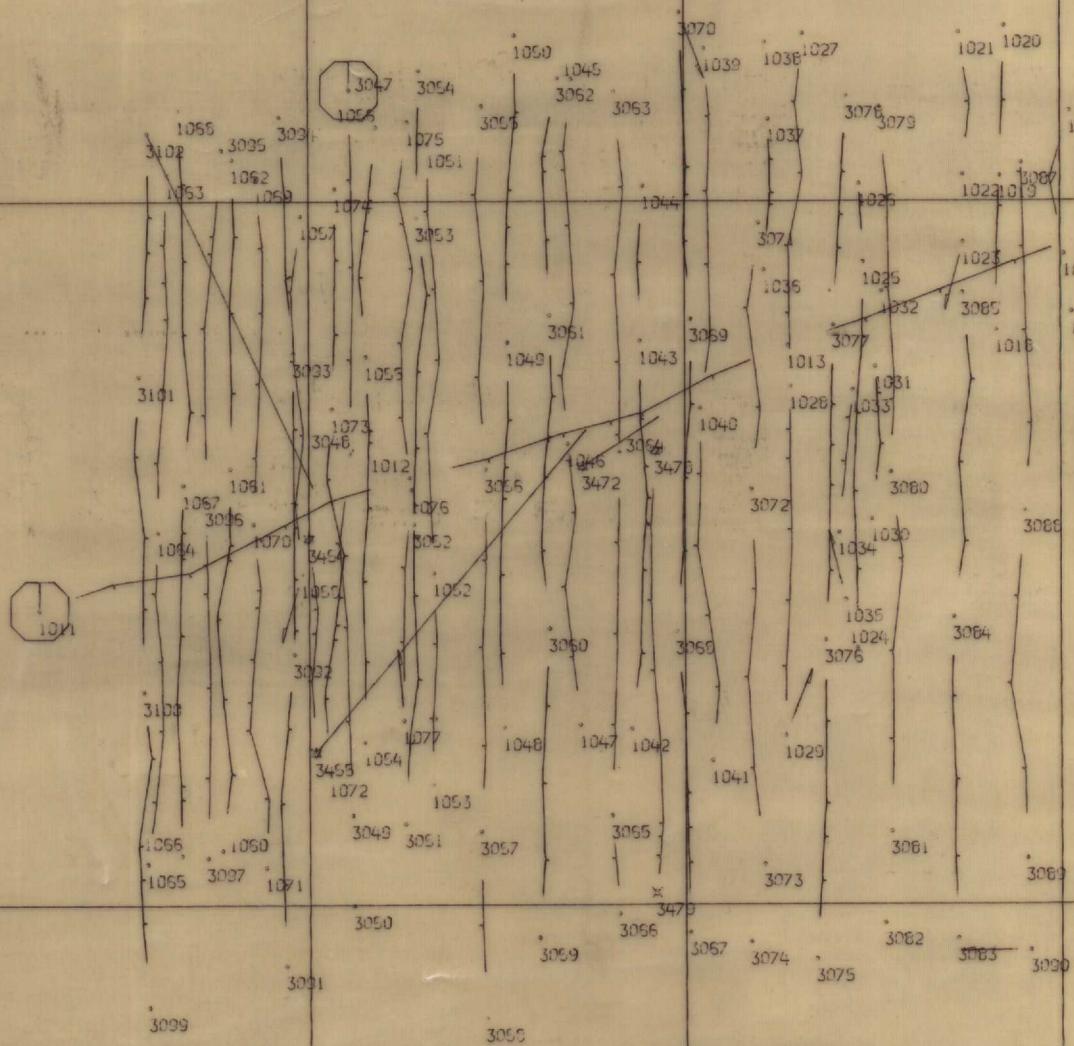
FE-272

POSITION OVERLAY

55° 21′ 15″ 155° 21′ 00″ 155° 20′ 45″ 155° 20′ 30″

57° 41′ 45″

FE-272
POSITION OVERLAY



57° 41′ 30″

57° 41′ 15″

Sheet 3 of 4

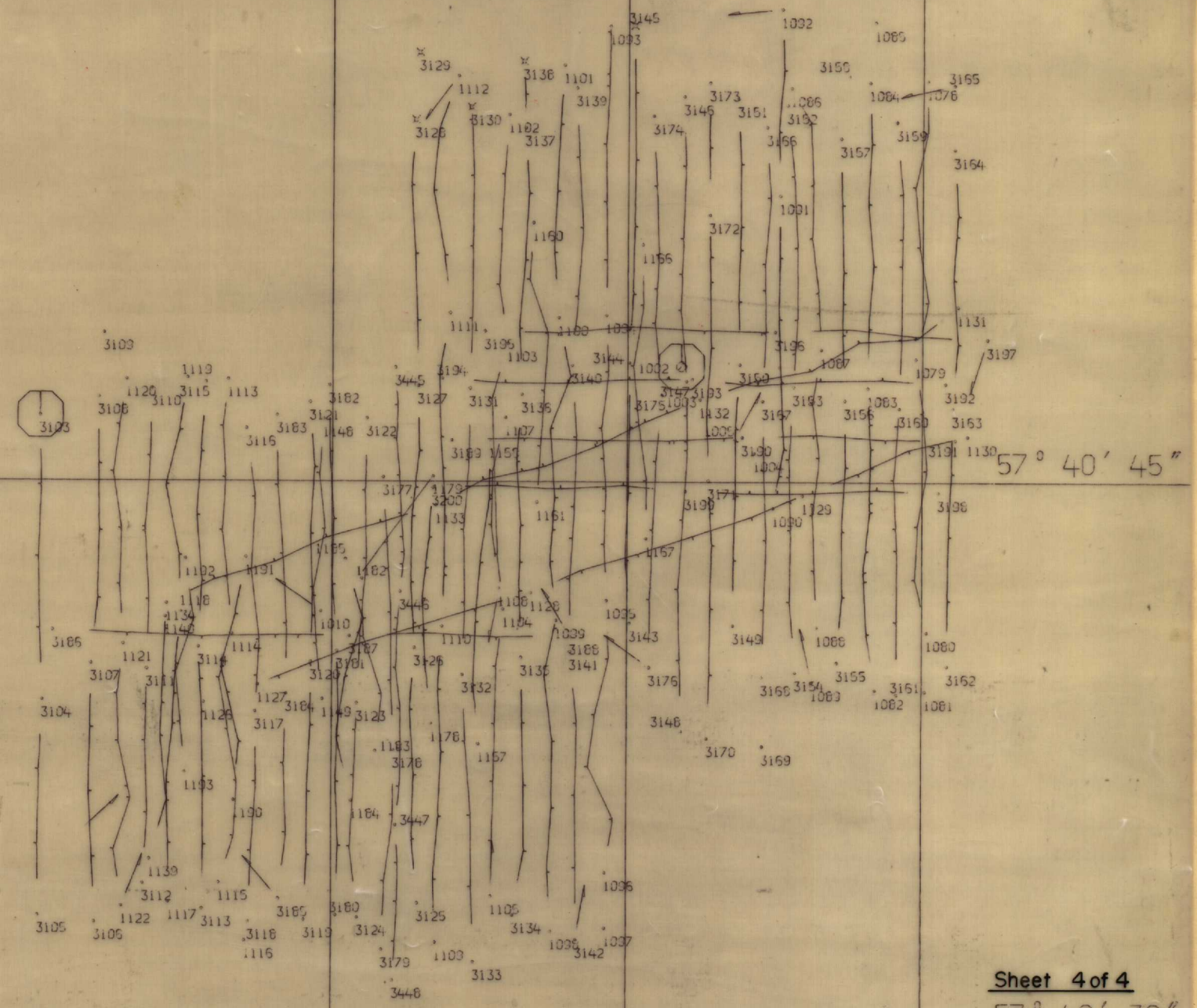
55° 21′ 15″ 155° 21′ 00″ 155° 20′ 45″ 155° 20′ 30″

FE-272

OSTION OVERLAY

155° 21′ 45″ 155° 21′ 30″ 155° 21′ 15″

57° 41′ 00″



57° 40′ 45″

Sheet 4 of 4

57° 40′ 30″

155° 21′ 45″ 155° 21′ 30″ 155° 21′ 15″

Hydrographic Index No. 116E

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Washington, D.C.

INDEX
HYDROGRAPHIC SURVEYS
Complete through May 1969

1942-1965
SHELIKOF STRAIT
ALASKA
HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-6758△	1942	10,000
H-6829△	1942	600
F.E. No. 6	1944	20,000
H-6925 & Ad. Wk.	1944	120,000
F.E. No. 3	1946-47	200,000
H-7194	1947	20,000
H-7195	1947	20,000
H-7196	1947	40,000
H-7197	1947	40,000
H-7812	1949	40,000
H-7822	1949	10,000 20,000
H-7874	1950	5,000
F.E. No. 7	1954	10,000
H-8118	1954	10,000
H-8284	1956	5,000
H-8490	1959	5,000
H-8619△ (3 areas)	1961	40,000
H-8843	1965	40,000

On Scale of { 1:10000 6.34 inches = 1 statute mile
1:20000 3.17 inches = 1 statute mile

△ Wire Drag

Diagram No. 8556-3

156° 154° 152° 59° 58°

AUGUSTINE ISLAND
F.E. No. 3, 1947
KAMISHAK BAY
H-8843
COOK INLET
KENAI PEN
H-8619△
BARREN ISLAND
H-8619△
CAPE DOUGLAS
ALASKA PEN
H-7822
Kukak Bay
H-7812
CAPE PARAMANOF
SHUYAK ISLAND
AFOGNAK ISLAND
RASPBERRY I.
Marmot Bay
SHELIKOF STRAIT
H-8118
FE No. 7
1954
FE No. 6 1944
H-6758△
H-6829△
H-8490
H-8284
Chiniak Bay
H-7874
CAPE CHINIAK
FE-272
H-7195
Puale Bay
H-7194
H-7196
CAPE KARLUK
KODIAK I
H-7197
NARROW CAPE
H-6925 & Ad Wk
DANGEROUS CAPE
CAPE BARNABAS

NOAA FORM 75-96
(10-83)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. FE-272

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
16580	6/3/87	R. [illegible]	Full ~~Part Before~~ After Marine Center Approval Signed Via
~~16575~~	~~12/19/88~~	~~D. [illegible]~~	Drawing No. 20 8th Ed.
16575	12/19/87	D. [illegible]	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 1 1st Ed. New Chart
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
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			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.